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(54) Abstract Title
Short range data communication between Personal Digital Assistants

(57) A communications device such as a PDA (personal digital assistant) with a short range wireless transceiver detects other similar devices within communication range by transmitting an interrogation signal and receiving a confirmation of receipt signal. The PDA can then exchange data automatically with other PDAs which come into its range, thereby saving the user's time in setting up a link. The devices preferably communicate using Bluetooth (RTM) transceivers. The communication range may be controlled by the user to limit the number of devices contacted to those in the same room for example. PDAs may exchange selected user details.
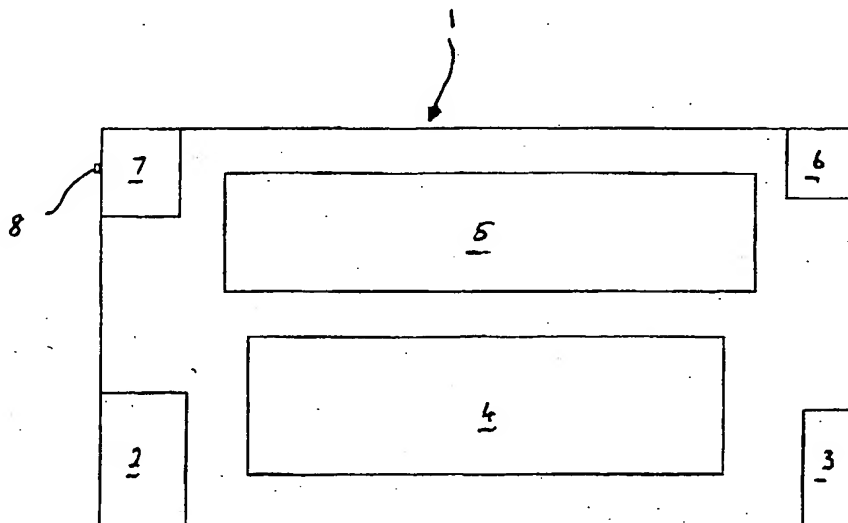
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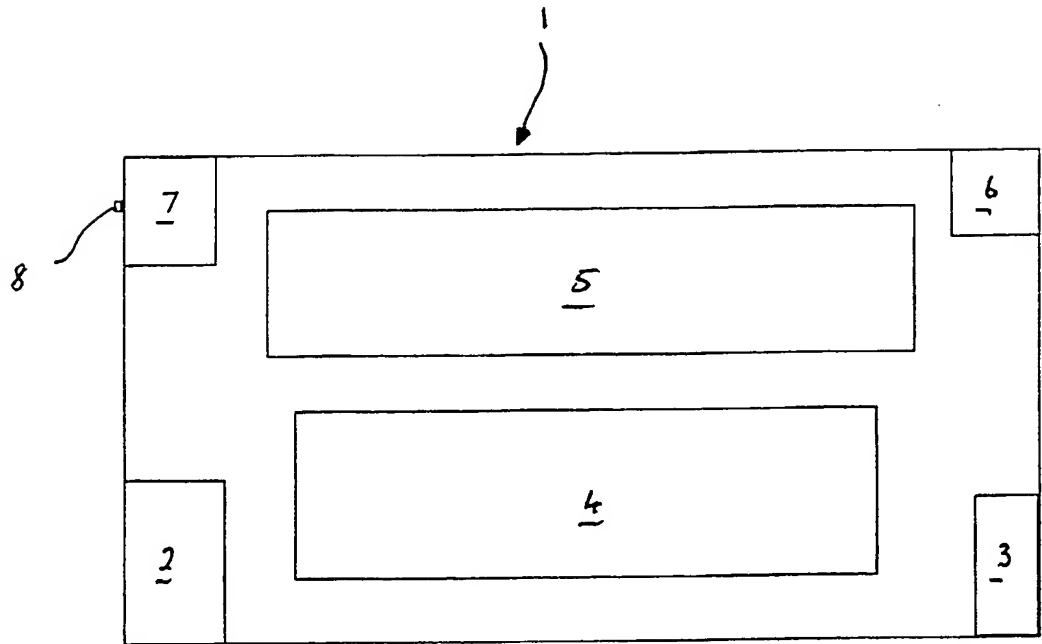
Communications Device

This invention relates to a communications device, and in particular to a communications device including a programmable memory store.

5   The invention is particularly concerned with a device such as an electronic personal digital assistant (PDA) which is used, for example, to store business and personal acquaintance details (such as names, addresses, job titles and telephone numbers) in electronic form.

The aim of the invention is to provide a communications device of this type which 10   can communicate with similar devices.

The present invention provides a communications device comprising a short range transceiver, a programmable memory store, and a sensor for sensing a similar communications device within range of the transceiver.

In a preferred embodiment, the transceiver constitutes the sensor, the transceiver 15   being controllable to transmit an interrogation signal to, and to receive a confirmation of receipt signal from, a similar device within the range of the transceiver. In this case, the device may further comprises control means for controlling the transmission of data from, and receipt of data by, the device following receipt of confirmation of receipt signal from a similar device. Advantageously, the control means is constituted by a 20   programmable central processing unit.

Preferably, the transceiver is a Bluetooth transceiver.

The invention will now be described, in greater detail, by way of example, with reference to the accompanying drawing, the single figure of which is a schematic representation of a PDA constructed in accordance with the invention.

25   Referring to the drawing, an electronic PDA 1 includes a programmable memory store 2, a CPU 3, a keyboard 4 for inputting data, and a display 5 for displaying stored data and data as it is input. The PDA 1 also includes a Bluetooth transceiver 6 for communication with similar PDAs (not shown) in the vicinity.

Bluetooth is a computing and communications industry specification that 30   describes how mobile 'phones, computers and PDAs can easily interconnect with each other, and with home and business telephones, using a short-range wireless connection.

Each Bluetooth device is equipped with a microchip transceiver with transmits and receives in the previously-unused band of 2.45 Ghz that is available globally with some variation of bandwidth in different countries. In addition to data, up to three voice channels are available. Each Bluetooth device has a unique 48-bit address from the

5 IEEE 802 standard, and connections can be point-to-point or multi-point. The maximum range of Bluetooth is 10 m, and data can be exchanged at a rate of 1 megabits per second (up to 2 Mbps in the second generation of the technology). A frequency hop scheme allows devices to communicate even in areas where there is a great deal of electromagnetic interference. Built-in encryption and verification is

10 provided in the Bluetooth specification.

The PDA 1 is set up so that its Bluetooth transceiver 6 can interrogate similar PDAs in its vicinity. Software provided in the PDA 1 allows the range of the link to be controlled by the user, to limit, for example, the number of devices contacted to those in a relatively well defined area, for example in the immediate vicinity of a meeting room.

15 The PDA 1 will then monitor the response pattern of other users' PDAs to determine when to prompt the user with other users' details. For example, if another user's ID has not be detected for a pre-set time, then the other user is considered recently to have come into range, and a prompt is given to the user of the PDA 1.

The user of the PDA 1 may also pre-set parameters for a warning algorithm to

20 provide a response profile of known other PDAs, thereby removing the necessity for unnecessary prompting of the PDAs of well known acquaintances. The software present in the PDA 1 is also such that the user may pre-select prompt information detail to include additional information about the user of a given other PDA, for example the names of that other user's family and friends. The user of the PDA 1 may also set

25 profiles to control the release of his own information to the users of other PDAs.

Prompt information is conveyed to the user of the PDA 1, in a private manner, using, for example, speech synthesis through an earpiece (not shown). In order to do this, the PDA 1 is provided with a speech synthesis chip 7, and the earpiece is plugged into the PDA at a port 8.

30 It will be apparent that the PDA 1 described above can sense the proximity of other PDA devices, and exchange data automatically when a new PDA comes into its vicinity, thereby saving the user's time in setting up a link and exchanging data.

The PDA 1 described above could be modified in a number of ways. For example, instead of using a Bluetooth transceiver, the PDA 1 could use another form of short range radio link or an infrared link. It would also be possible to connect the earpiece remotely to the PDA via a short range radio link such as Bluetooth.

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Claims

1.   A communications device comprising a short range transceiver, a programmable memory store, and a sensor for sensing a similar communications device within range of the transceiver.

2.   A device as claimed in claim 1, wherein the transceiver constitutes the sensor, the transceiver being controllable to transmit an interrogation signal to, and to receive a confirmation of receipt signal from, a similar device within the range of the transceiver.

3.   A device as claimed in claim 2, further comprising control means for controlling the transmission of data from, and receipt of data by, the device following receipt of confirmation of receipt signal from a similar device.

4.   A device as claimed in claim 3, wherein the control means is constituted by a programmable central processing unit.

5.   A device as claimed in any one of claims 1 to 4, wherein the transceiver is a Bluetooth transceiver.

6.   A device as claimed in any one of claims 1 to 5, wherein the device is a PDA.

7.   A PDA as claimed in claim 6, further comprising a keyboard for inputting data, and a display for displaying stored data and data at it is input.

Amendments to the claims have been filed as follows

Claims

1.   A communications device comprising a short range transceiver, a programmable memory store, and a sensor for sensing a similar communications device within range of the transceiver.

2.   A device as claimed in claim 1, wherein the transceiver constitutes the sensor, the transceiver being controllable to transmit an interrogation signal to, and to receive a confirmation of receipt signal from, a similar device within the range of the transceiver.

3.   A device as claimed in claim 2, further comprising control means for controlling the transmission of data from, and receipt of data by, the device following receipt of confirmation of receipt signal from a similar device.

4.   A device as claimed in claim 3, wherein the control means is constituted by a programmable central processing unit.

5.   A device as claimed in claim 3 or claim 4, wherein the control means includes a control element for implementing a selection algorithm to prevent unnecessary interrogation of other devices.

6.   A device as claimed in any one of claims 1 to 5, wherein the transceiver is a Bluetooth transceiver.

7.   A device as claimed in any one of claims 1 to 6, further comprising means for conveying selected information received from other devices in a private manner to the user.

8.   A device as claimed in any one of claims 1 to 7, wherein the device is a PDA.

9.   A PDA as claimed in claim 8, further comprising a keyboard for inputting data, and a display for displaying stored data and data at it is input.

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Claims searched:	All		Date of search:	21 August 2001

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

   UK Cl (Ed.S): H4L (LRPRD, LECY)

   Int Cl (Ed.7): G06F 13/00, H04L 12/28, H04Q 7/22, 7/32, 7/38

Other: Online Databases: WPI, EPODOC, JAPIO, INSPEC

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	EP0853400 A2 (DEUTSCHE THOMSON-BRANDT) see esp. p.8 lines 21-36	1-7
X, E	WO01/31851 A1 (PHILIPS) whole document	1-7
X	WO99/34631 A1 (ERICSSON) whole document	1-7

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.